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Science Advisory Report 2016/002

GUIDANCE ON IDENTIFYING "OTHER EFFECTIVE AREA-BASED CONSERVATION MEASURES" IN CANADIAN COASTAL AND MARINE WATERS

Figure 1. The administrative regions of Fisheries and Oceans Canada (DFO). The dashed line indicates Canada's Exclusive Economic Zone (EEZ).

Context

Sites managed by the Federal government and recognized as protected areas (i.e. Oceans Act Marine Protected Areas, National Marine Conservation Areas and National Wildlife Areas) will be reported as such in the context of the domestic and international biodiversity conservation targets. These targets include Target 1 of the 2020 Biodiversity Goals and Targets for Canada and the Convention on Biological Diversity Aichi Target 11. Science advice is needed to support the identification of federal sites in the marine environment that are not protected areas, but nevertheless contribute to the objectives of the targets, and should therefore be recognized and reported as "other effective area-based conservation measures".

This Science Advisory Report is from the June 22-23, 2015 national peer review on Guidance to Support the Identification of Effective Area-Based Conservation Measures. Additional publications from this meeting will be posted on the Fisheries and Oceans Canada (DFO) Science Advisory Schedule *as they become available.*

January 2016

Canada

SUMMARY

- Canada has agreed to a suite of international biodiversity conservation goals and targets (the Convention on Biological Diversity 2011-2020 Strategic Plan for Biodiversity's Aichi Targets) and adopted complementary domestic 2020 Biodiversity Goals and Targets for Canada. Both international and domestic targets call for the conservation of 10% of coastal and marine areas by 2020 (Canada's Target 1 and Aichi Target 11).
- The intent of the Canada's Target 1 and Aichi Target 11 is to contribute to halting the loss of biodiversity through the expansion of protected areas and other effective area-based conservation measures.
- Both domestic Target 1 and Aichi Target 11 refer to "other effective area-based conservation measures" (OEABCMs) as a means of achieving these targets. How this term is interpreted will influence reporting on these targets.
- In reporting on these targets, area-based management measures (ABMM) implemented in Canadian coastal and marine waters (e.g. various types of fishery closures, critical habitat, etc.) are to be assessed to determine whether they are likely to be providing biodiversity conservation benefits, whether they meet the intent of the target, and ultimately which ones can be considered an OEABCM.
- A biodiversity conservation benefit is the net positive change in biodiversity resulting from the implementation of an ABMM, where biodiversity is the variability among living organisms including the diversity within species, among species, and within and among ecosystems. Benefits can occur either directly or indirectly via measures adopted primarily for another purpose.
- There are a suite of characteristics and factors that can assist in determining whether an ABMM is likely to provide biodiversity conservation benefits such as: geographic location, location compared to preferred habitat, duration of implementation, management/conservation objectives, habitat heterogeneity, adjacent management practices, full vs. partial protection, size, and spatial relationships (i.e. connectivity).
- The aforementioned characteristics and factors can help one make inferences regarding the likelihood of biodiversity conservation benefits provided by an ABMM. It is important to consider the full suite of characteristics and factors when determining whether an ABMM is providing biodiversity conservation benefits. However, geographic location and duration of implementation are considered to be minimum requirements for an ABMM to be considered as an OEABCM.
- In most cases quantitative evaluations of ABMMs will not be possible and inferences will be required. Therefore, uncertainty is inherent throughout the process of identifying OEABCMs. This uncertainty can be reduced through appropriate monitoring focused on documenting the extent of the biodiversity conservation benefits that are inferred for the ABMM.
- This Science Advisory Report provides guidance to support the development of an operational framework to identify OEABCMs. The suite of characteristics and factors presented may be amended based on tests with case-studies and with the further elaboration of the operational framework.

BACKGROUND

At the 10th meeting of the Convention on Biological Diversity (CBD), Parties, including Canada, agreed to a revised and updated Strategic Plan for Biodiversity that includes five strategic goals and 20 biodiversity targets (known as the "Aichi Biodiversity Targets") that are to be met by 2020. In 2015, building on the Canadian Biodiversity Strategy and the Biodiversity Outcomes Framework, Canada released national biodiversity goals and targets for 2020 which closely align with the Aichi Biodiversity Targets established by the CBD.

Aichi Biodiversity Target 11 specifies that "By 2020, at least 17% of terrestrial and inland water, and 10% of coastal and marine areas, especially areas of particular importance for biodiversity and ecosystem services, are conserved through effectively and equitably managed, ecologically representative and well-connected systems of protected areas and other effective area-based conservation measures and integrated into the wider landscapes and seascapes."

Similarly, Canada's Biodiversity Target 1 is "By 2020 at least 17% of terrestrial areas and inland water, and 10% of coastal and marine areas, are conserved through networks of protected areas and other effective area-based conservation measures".

Although Canada's Biodiversity Target 1 has more simplified wording than Aichi Target 11, the intention behind Biodiversity Target 1 is that Canada will address all aspects of Aichi Target 11 (i.e. effectively and equitably managed, ecologically representative and well-connected systems... integrated into the wider landscapes and seascapes) through existing processes and initiatives, including MPA network development. It should be noted that Aichi Target 11 and Canada's Target 1 focus on conserving biodiversity through area-based protection and conservation. Many other aspects of biodiversity conservation (including sector-specific targets for fisheries and aquaculture) are covered under other targets.

Environment Canada is the lead department for both the CBD and the Canadian Biodiversity Strategy, with Fisheries and Oceans Canada (DFO) responsible for aspects that fall directly under its jurisdiction/mandate. Thus, to facilitate reporting on DFO's contribution to Target 1 in the marine environment, a consistent interpretation of the phrase "other effective area-based conservation measures" (OEABCMs) is required.

The Canadian Council on Ecological Areas (CCEA), a national non-profit organization comprised of federal-provincial-territorial-stakeholder members, is developing guidance on reporting on Canada's progress on Aichi Target 11 and Canada's Target 1. The CCEA is also developing a screening tool that can be used in the process of identifying OEABCMs.

Further, in WCC2012Res035-2 of the IUCN World Conservation Congress, the IUCN definition of a protected area, including the full range of protected area management categories and governance types, will be the primary basis for the inclusion of protected areas to contribute towards meeting Target 11; however, OEABCMs can also contribute to reaching the target.

This science advisory report provides general guidance to assist in the development of an operational framework to identify OEABCMs in Canadian coastal and marine environments.

ANALYSIS

Glossary

To ensure consistent use of terminology, a glossary of definitions relevant to this science advisory report is provided in Appendix 1.

What is an "Other Effective Area-Based Conservation Measure"?

An ABMM is a spatially-defined management measure in coastal or marine waters implemented to achieve one or more objectives (i.e. conservation, socio-economic, or cultural). In this report ABMMs are distinct from Canada's marine protected area programs with sites established under legislation (notably MPAs under the *Oceans' Act*, NMCAs under the *Canada National Marine Conservation Areas Act* and marine National Wildlife Areas under the *Canada Wildlife Act*). An ABMM cannot be considered an OEABCM in the context of domestic and international biodiversity targets unless it is demonstrated or inferred that it is providing one or more biodiversity conservation benefits.

An OEABCM is defined as an ABMM that provides biodiversity conservation benefits, where

Biodiversity, according to the CBD, is defined as follows:

> *The variability among living organisms from all sources including, inter alia, terrestrial, marine and other aquatic ecosystems and the ecological complexes of which they are part; this includes diversity within species, between species, and of ecosystems.*

A biodiversity conservation benefit is defined as follows:

> *The benefit attributable to a conservation action is the difference between the outcomes of two scenarios for a specified site/area: (1) the scenario with the conservation action, and (2) the alternative scenario, in which action did not occur.*

Conceptually, a biodiversity conservation benefit is the net positive change in, or preventing the loss of, biodiversity resulting from the implementation of an ABMM.

ABMMs should be evaluated for the probability that they will contribute to halting the loss of biodiversity, and not solely for their ability to maintain a population, species, or community in a state for human use (e.g. eco-tourism, fishing, etc.).

In addition, when identifying OEABCMs for reporting on the biodiversity targets, ABMMs should be evaluated for their potential effectiveness in providing net biodiversity conservation benefits, not necessarily whether a specific management or conservation objective set for the area under consideration is being met.

Biodiversity conservation benefits may result from implementing an ABMM to protect or conserve a specific species or group of species. In addition, an ABMM may confer positive benefits to other species; these indirect benefits may also be referred to as co-benefits. For example, an ABMM implemented to increase abundance or manage the harvest of species X also results in co-benefits for species Y and Z.

The likelihood that an ABMM is contributing to halting the loss of biodiversity increases if co-benefits are known or can be inferred, and are expected to continue into the foreseeable future; this likelihood further increases as the number of ecological components receiving direct or indirect benefit increases.

Examples of direct or indirect biodiversity conservation benefits include, but are not limited to:

- Increases in abundance and biomass of species, age/size composition, spawning stock biomass, spillover and larval supply, yield of target species;
- Increased habitat, community, species, or genetic diversity;
- Restoration of trophic guilds;
- Conservation of critical or preferred habitats for target species; and/or

- Conservation of species and species assemblages.

Characteristics and Factors to Consider when Evaluating Area-Based Management Measures

Ideally, the effectiveness of ABMMs in providing biodiversity conservation benefits should be quantitatively assessed. However, in many cases a quantitative evaluation will not be possible (e.g. due to a lack of baseline data, insufficient monitoring, etc.).

Where quantitative evaluations of the effectiveness of ABMMs in providing biodiversity conservation benefits are not feasible, it will be necessary to use the best available information to make scientifically-sound inferences. These inferences must be accompanied by a full explanation of the supporting evidence and any associated uncertainties and assumptions.

The characteristics and factors listed below should be considered when assessing whether an ABMM may be providing biodiversity conservation benefits.

For an ABMM to be considered an OEABCM, it must address two minimum requirements: a well-defined geographic location and a commitment or expectation that the measure will be in place for the foreseeable future. If the ABMM does not possess these minimum requirements it should not be considered further. The remaining characteristics and factors are presented in no particular order and may not be an exhaustive list. The most scientifically sound evaluations of ABMMs will be made by considering the full suite of factors and characteristics as an interacting whole, rather than decisions based on single factors or considerations. In addition, many of the individual characteristics and factors can be influenced by the presence and magnitude of the others.

Geographic Location

The geographic location of an ABMM must be spatially well-defined.

Determining the likelihood of an ABMM providing biodiversity conservation benefits will be substantially more complex where ABMMs do not have a fixed location (e.g. for predictable but mobile reserves such as the variability of the location of the ice edge). Mobile ABMMs are more challenging for people to avoid and prohibitions are more difficult for managers to enforce, both of which can diminish the ability of the ABMM to deliver biodiversity conservation benefit.

Duration of Implementation

An ABMM is more likely to provide biodiversity conservation benefits if it has been in place over the long term and if one can reasonably expect that it will continue into the foreseeable future, or at least long enough to achieve its conservation objectives. Similarly, for newly established ABMMs there is a higher likelihood that they will provide biodiversity conservation benefits if the ABMMs are expected to remain in place into the foreseeable future.

It is important to take into account the state of the ecosystem at the time the ABMM was implemented. Ecological components may require decades to recover from disturbance and therefore older ABMMs are more likely to provide biodiversity conservation benefits if human-induced threats have been removed or reduced. However, the length of time for disturbed areas to recover may not always be predictable and therefore defining a simple relationship between change and time since implementation is difficult. Therefore the duration of the implementation of an ABMM must be considered in the biological context of the biodiversity it intends to protect.

Long-term security of an ABMM increases where formal agreements exist to maintain the measure through legislation or regulations. Where there is reliable evidence of

stakeholder/jurisdictional support for the ABMM there is increased likelihood that it will persist into the future.

Size of Managed Area

Size is a relevant consideration in determining whether an ABMM may be providing biodiversity conservation benefits. Evidence suggests larger areas are more likely to result in conservation benefits than smaller ones when other factors (e.g. degree of protection, type of species, habitat, ecosystem, etc.) are comparable. However, smaller ABMMs can still generate biodiversity conservation benefits, especially if the area protected is of particular ecological importance (e.g. seamounts, hydrothermal vents, coral and sponge aggregations, etc.).

Consideration of the life history or habitat requirements of the ecological component(s) of interest are relevant when evaluating the likelihood of conservation benefits, in that they may determine a minimum size for the ABMM, below which the area may not be sufficient to provide the desired results.

Location in Relation to Preferred Habitat

When particular species or species groups are of conservation concern, the location of an ABMM in relation to their preferred habitat is an important consideration in determining whether the ABMM will provide biodiversity conservation benefits. If an ABMM does not overlap with the preferred habitat of a priority species or species group, then biodiversity conservation benefits for those particular species or groups may be reduced. The likelihood that an ABMM will provide biodiversity conservation benefits increases if it encompasses habitat or oceanographic features that are known to support important life history events and/or biological processes (e.g. feeding and spawning areas) of single or multiple species. This is particularly true when those life history events are spatially restricted.

There is a high likelihood that the ABMM will provide biodiversity conservation benefits if an ABMM is implemented to broadly protect ecosystem or functional biodiversity (e.g. by including diverse or unique habitats such as seamounts, hydrothermal vents, or methane seeps) as such features are often associated with unique biological communities or populations.

The likelihood further increases if the ABMM is located where it includes multiple habitats, structure-forming species, and rare and/or specialized habitat types (see Habitat Heterogeneity below).

Conservation Objectives

It is expected that the likelihood of an ABMM providing net biodiversity conservation benefits increases where the conservation of biodiversity is its primary objective and further increases where objectives address multiple elements of biodiversity (e.g. genetic diversity, groups of species, habitats, etc.). The likelihood of benefits increases as protection of specific biodiversity features or biodiversity in general is made explicit in the suite of objectives and is also reflected in the level of protection provided by the management measure(s).

An ABMM may be providing biodiversity conservation benefits even if the objectives for an area do not explicitly include a variant of "halting the loss of biodiversity". In these cases ABMMs need to be evaluated very carefully since if conservation is not a stated objective, the measure may not remain in place once its non-conservation objectives have been met. The resulting time span of the measure may not be sufficient to provide conservation benefits.

Further, there are often multiple objectives that include both ecological and socio-economic/human use objectives. All objectives for an area should be considered in evaluating the likelihood that ABMM will produce direct or indirect biodiversity conservation benefits.

Some objectives may contribute to halting the loss of biodiversity whereas others may be primarily designed to enhance resource exploitation. An important consideration is the risk that ecological objectives may be compromised in the pursuit of the other objectives. In the context of ongoing management decisions within an ABMM, where there is conflict between ecological and other objectives the conservation of biodiversity must prevail.

Habitat Heterogeneity

Different coastal and marine habitat types encompass distinct species assemblages, and therefore, areas which include a variety of habitats will have a greater likelihood of including more species. In addition, high habitat heterogeneity has been shown to enhance ecosystem resilience in the face of change.

It can be inferred that if multiple habitat types and/or structure-forming species are present, the ABMM has a higher likelihood of providing biodiversity conservation benefits. However, ABMMs that include only a single habitat type can still produce important biodiversity conservation benefits if habitat types are of particular interest to the conservation of biodiversity (e.g. inherently rare, unique, highly threatened, or a biodiversity "hotspot").

Adjacent Management Practices

Anthropogenic activities occurring outside of an ABMM can affect ecosystems, communities, and species within it. Such effects can arise either from the outside influence of anthropogenic activities (e.g. transport of contaminants, excess nutrients, fishing, noise, etc.), or when species afforded protection by the ABMM spend part of their life histories outside its boundaries.

For mobile or migratory species it is particularly important to consider the degree to which management strategies employed outside the ABMM (e.g. sustainable fisheries practices for target and bycatch species, marine environmental quality standards, etc.) effectively address threats to those species.

The likelihood of an ABMM providing biodiversity conservation benefits may be reduced or negated if threats are not managed effectively outside its borders. Therefore, an ABMM that is accompanied by additional measures adjacent to its borders is more likely to provide biodiversity conservation benefits than one that does not.

Full versus Partial Protection

ABMMs can encompass a range of protection levels, from fully protected no-take areas to the restriction of specific activities, gear types, user groups, target species, or exploitation periods.

There is a higher likelihood of biodiversity conservation benefits in ABMMs that afford full protection from all threats to the ecological component(s) of interest (e.g. no-take protected areas). However, it should be noted that oceanographic processes can transport some types of threats (e.g. contaminants, etc.) over large distances and into ABMMs.

ABMMs that afford only partial protection from threats (i.e. only some activities are prohibited) may still provide biodiversity conservation benefits. These ABMMs require thorough evaluation to determine whether or not the permitted activities compromise the conservation objectives and/or the conservation benefits conferred by the measure. This type of evaluation may be challenging as quantitative data may be lacking. Key considerations in an evaluation of net benefits would include:

a) Whether the human activities (current and potential) that are permitted in the ABMM are undermining the conservation objective and/or the biodiversity conservation benefits (or are likely to do so in the foreseeable future); and

b) If threats are present, whether they are effectively managed to ensure the conservation objectives and/or biodiversity conservation benefits delivered by the measure are not compromised.

Connectivity

Ecological connectivity is fundamental to biodiversity. In marine ecosystems, an example of connectivity is the natural linkage between different life history stages of marine biota which frequently occur in different locations and habitats. Movement between areas may be passive (e.g. larval dispersal), or active (e.g. the movement of adults and juveniles between nursery, feeding, or spawning areas). Connectivity is an important consideration for the persistence of biodiversity in areas impacted by natural or human activities through the provision of linked refugia and the potential for recolonisation. It is therefore a relevant consideration in evaluating some aspects of effectiveness of ABMMs.

For species with complex life histories (e.g. highly mobile and migratory species) ABMMs that are large and functionally connected to other ABMMs are more likely to provide biodiversity conservation benefits than small, isolated reserves. Ecological connectivity is particularly important for these species as their life histories are usually spatially segregated. In general, the more connected ABMMs are to one another the higher the likelihood they will provide biodiversity conservation benefits.

However, ABMMs that include unique or highly diverse ecosystems; (e.g. seamounts, hydrothermal vents, corals and sponge aggregations, etc.) are likely to produce conservation benefits in their own right, regardless of their degree of connectivity to other ABMMs.

Biophysical oceanographic and spatial ecosystem models as well as genetic and tagging studies can help inform the level of connectivity between ABMMs, recognizing that a substantial amount of knowledge and information will be required to conduct these analyses.

Other Factors

The following factors, considered primarily related to the governance and management of ABMMs, should also be considered when they are being evaluated:

- The authority of the jurisdictional, legal, or social body tasked with governing the ABMM, including whether co-management is an important consideration for the area;
- Whether binding mechanisms exist to govern the area (e.g. legislation or regulations) or whether activities are restricted in other ways (e.g. voluntary closures; license conditions; or policies);
- The enforceability of the measure and whether compliance with the measure has been or can be demonstrated; and
- Whether an appropriate monitoring plan has been implemented, and whether a management system is in place to adaptively manage the area (if necessary).

Challenges can arise with any of the above governance factors. For example, a lack of jurisdictional authority to create and manage the ABMM; voluntary measures where the will to comply may be low; lack of ability to enforce management measures and for which compliance may be questionable; and simply a lack of ability to reliably demonstrate that the ABMM is providing biodiversity conservation benefits.

Area-Based Management Measures Implemented by DFO in Canadian Coastal and Marine Environments

Although there is a suite of federal, provincial, territorial and community based ABMMs in Canadian coastal and marine environments that may provide biodiversity conservation benefits, only those ABMMs implemented by DFO are provided as examples in this report.

In addition to *Oceans Act* MPAs, there are a number of other management measures implemented by DFO in Canadian coastal and marine waters (Table 1). Some of these measures may have the potential to qualify as "other effective area-based conservation measures". Though some of these areas may not have been created explicitly for biodiversity conservation, as previously discussed, they may provide co-benefits through measures adopted primarily for another reason.

Table 1. Types of area-based management measures (ABMM) implemented by DFO in Canadian coastal and marine environments.

Types of Management Measures	Mechanism
• Fisheries closures or restrictions for the protection of benthic species and habitats (e.g. coral conservation areas) • Fisheries closures or restrictions for the protection of marine mammals and species at risk • Fisheries closures or restrictions for the protection of commercial fish spawning • Fisheries closures or restrictions for the protection of commercial fish juveniles • Seasonal fishery closures (e.g. April 1st – December 31st) • Pacific Rockfish conservation areas (RCAs)	• *Fisheries Act*
• Critical Habitat	• *Species at Risk Act*
• Voluntary protection measures implemented by industry stakeholders (e.g. to reduce ship strikes and noise impacts on whales; to reduce gear interactions with corals and sponges; etc.)	• Voluntary (recognized in DFO publications such as Notice to Mariners and/or Integrated Fisheries Management Plans)

Sources of Uncertainty

There is no scientific basis for assuming that any one type of ABMM – or even MPAs for that matter – is more effective at providing biodiversity conservation benefits.

Few quantitative evaluations have demonstrated the effectiveness of ABMMs in Canadian waters and published reviews of experiences internationally consistently report variable outcomes for particular types of ABMM, depending on a variety of interacting factors. Given this, and considering that in many cases, quantitative evaluations of ABMMs will not be possible and inferences are required, uncertainty is inherent throughout all aspects of the process of identifying OEABCMs. This uncertainty may be reduced through targeted ecosystem monitoring to demonstrate the extent of the biodiversity conservation benefits resulting from the management measure.

In addition, because ABMMs may be applied under a wide range of ecological and governance conditions, evaluations of individual ABMMs will have less uncertainty than evaluations of a general type of ABMM (e.g. fisheries closures, critical habitat, etc.) when determining the likelihood of conservation benefits.

CONCLUSIONS

In reporting against Aichi Target 11 and Canada's National Biodiversity Strategy Target 1, there is a suite of ABMMs that can be evaluated to determine whether they are likely to be providing biodiversity conservation benefit and, if found to do so, can be considered an OEABCM.

Biodiversity conservation benefits in the context of this advice are those that contribute to a net positive change in biodiversity, which contribute to halting the loss of biodiversity – and not necessarily whether an ABMM has explicitly stated biodiversity conservation objectives and is effectively meeting them. An important consideration is the risk that ecological objectives may be compromised in the pursuit of the other objectives. In cases of conflict between objectives the conservation of biodiversity must prevail.

Recognizing that in many cases a quantitative assessment will not be possible, inferences will be required to determine whether an ABMM may be an OEABCM. It is suggested that these inferences be based on a suite of characteristics and factors that, if met, increase the likelihood of an ABMM providing biodiversity conservation benefits. The greater number of characters and factors that an ABMM possesses the more likely it is to provide biodiversity conservation benefit(s). It should be noted that these characteristics and factors would also be included in any quantitative evaluation, should one be possible.

Any uncertainty associated with the identification of OEABCMs in Canadian waters must be fully documented.

This Science Advisory Report provides guidance to support the development of an operational framework to identify OEABCMs. The suite of characteristics and factors presented may benefit from amendment based on tests with case-studies and further elaboration of the operational framework.

OTHER CONSIDERATIONS

The aforementioned list of characteristics and factors may not be an exhaustive list. Further, it is recommended that they be tested as we move towards an operational framework for the identification of other effective area-based conservation measures. This testing may result in modifications to the list.

Although certain management measures may not contribute to reporting under Aichi Target 11 and Canada's Biodiversity Target 1 because they lack the necessary properties, they may still contribute to halting the loss of biodiversity (as specified as the overarching goal in the CBD Strategic Plan) and thus could potentially be considered towards reporting towards other domestic and international biodiversity targets.

SOURCES OF INFORMATION

This Science Advisory Report is from the June 22-23, 2015 national peer review on Guidance to Support the Identification of Effective Area-Based Conservation Measures. Additional publications from this meeting will be posted on the Fisheries and Oceans Canada (DFO) Science Advisory Schedule as they become available.

CCEA. 2013. Interpreting Aichi Biodiversity Target 11 in the Canadian context: Towards consensus on "other effective area-based conservation measures". Canadian Council on Ecological Areas. Summary and Results of a CCEA National Workshop 5-7 February 2013, Ottawa, Canada. 18pp.

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Government of Canada. 1995. Canada's Biodiversity Strategy. Minister of Supply and Services Canada. Catalogue No. En21-134/1995E.

APPENDIX 1: GLOSSARY

Area-Based Management Measure (ABMM): A spatially-defined management measure in coastal or marine waters implemented to achieve one or more objectives (i.e. conservation, socio-economic, or cultural). An ABMM cannot be considered an "other effective area-based conservation measure" in the context of domestic and international biodiversity targets unless it is demonstrated or inferred that it is providing biodiversity conservation benefit(s).

Biodiversity: The variability among living organisms from all sources including, inter alia, terrestrial, marine and other aquatic ecosystems and the ecological complexes of which they are part; this includes diversity within species, between species and of ecosystems.

Biodiversity Conservation Benefit: The benefit attributable to a conservation action is the difference between the outcomes of two scenarios:

1) the scenario with the conservation action, and
2) the alternative scenario, in which action did not occur.

Conceptually, a biodiversity conservation benefit is the positive change in, or preventing the loss of, biodiversity resulting from the implementation of an area-based management measure.

Co-benefit: A biodiversity conservation benefit that occurs indirectly as the result of the implementation of a management measure designed to achieve some other objective.

Conservation Objective: An objective that deals specifically with ecological outcomes and describes desirable states of key components of a healthy ecosystem. In the context of this advice, conservation objectives provide an explicitly stated biodiversity conservation benefit.

Critical Habitat: The habitat that is necessary for the survival or recovery of a wildlife species listed under Canada's *Species at Risk Act* and that is identified as the species' critical habitat in the recovery strategy or in an action plan for the species.

Ecological Component: Any biotic or abiotic component of an ecosystem. Guidance on identifying ecosystem components of interest has been provided in previous science advice reports, in particular those related to the identification of Ecologically and Biologically Significant Areas (EBSAs), Ecologically Significant Species (ESSs), and Community Properties (CPs).

Effective: Successful in producing a desired or intended result.

Fishery Closure: A spatial management measure implemented through Canada's *Fisheries Act* to temporarily or permanently prohibit specific fishing activities in a defined coastal or marine area for the purpose of meeting specific objectives.

Management Objective: An objective put in place to achieve a specified outcome. The objective may or may not lead to a biodiversity conservation benefit.

Marine Protected Area (established under the *Oceans Act*): An area of sea in Canada's internal waters, territorial sea or exclusive economic zone that receives special protection from human activity for the purposes of conserving and protecting:

1) commercial and non-commercial fishery resources,
2) endangered or threatened marine species and their habitats,
3) unique habitats,

4) special areas of high biodiversity or biological productivity, and
5) any other marine resources or habitat that the Minister of Fisheries and Oceans deems necessary.

Marine Protected Area (IUCN definition): A clearly defined geographical space, recognized, dedicated and managed, through legal or other effective means, to achieve the long term conservation of nature with associated ecosystem services and cultural values.

Other Effective Area-Based Conservation Measure (OEABCM): An area-based management measure that is providing one or more biodiversity conservation benefits.

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Canadian Science Advisory Secretariat (CSAS)
National Capital Region
Fisheries and Oceans Canada
200 Kent Street Ottawa, ON K1A 0E6

Telephone: 613-990-0293
E-Mail: csas-sccs@dfo-mpo.gc.ca
Internet address: www.dfo-mpo.gc.ca/csas-sccs/

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